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PTO/SB/17 (10-01)
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| FEE TRANSMITTAL for FY 2002 Patent fees are subject to annual revision. | | Complete if Known | |
| | | Application Number | 09/614,682 |
| TOTAL AMOUNT OF PAYMENT (\$) 110 | | Filing Date | July 12, 2000 |
| | | First Named Inventor | Summers et al |
| | | Examiner Name | Nguyen, J. |
| | | Group Art Unit | 2815 |
| | | Attorney Docket No. | 79,812 |

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| METHOD OF PAYMENT | | FEE CALCULATION (continued) | |
| 1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to Deposit Account Number: 50-0281 Deposit Account Name: Naval Research Laboratory <input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27 | | 3. ADDITIONAL FEES Large Entity Small Entity Fee Fee Fee Fee Fee Description Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) 105 130 205 65 Surcharge - late filing fee or oath 127 50 227 25 Surcharge - late provisional filing fee or cover sheet 139 130 139 130 Non-English specification 147 2,520 147 2,520 For filing a request for ex parte reexamination 112 920* 112 920* Requesting publication of SIR prior to Examiner action 113 1,840* 113 1,840* Requesting publication of SIR after Examiner action 115 110 215 55 Extension for reply within first month 116 400 216 200 Extension for reply within second month 117 920 217 460 Extension for reply within third month 118 1,440 218 720 Extension for reply within fourth month 128 1,960 228 980 Extension for reply within fifth month 119 320 219 160 Notice of Appeal 120 320 220 160 Filing a brief in support of an appeal 121 280 221 140 Request for oral hearing 138 1,510 138 1,510 Petition to institute a public use proceeding 140 110 240 55 Petition to revive - unavoidable 141 1,280 241 640 Petition to revive - unintentional 142 1,280 242 640 Utility issue fee (or reissue) 143 460 243 230 Design issue fee 144 620 244 310 Plant issue fee 122 130 122 130 Petitions to the Commissioner 123 50 123 50 Processing fee under 37 CFR 1.17(c) 126 180 126 180 Submission of Information Disclosure Statement 581 40 581 40 Recording each patent assignment or property (times number of properties) 146 740 246 370 Filing a submission after final rejection (37 CFR § 1.129(a)) 149 740 249 370 For each additional invention to be examined (37 CFR § 1.129(b)) 179 740 279 370 Request for Continued Examination (RCE) 169 900 169 900 Request for expedited examination of a design application Other fee (specify) _____ SUBTOTAL (3) (\$) 110 | |
| 2. <input type="checkbox"/> Payment Enclosed: <input type="checkbox"/> Check <input type="checkbox"/> Credit card <input type="checkbox"/> Money Order <input type="checkbox"/> Other | | | |
| FEE CALCULATION | | | |
| 1. BASIC FILING FEE Large Entity Small Entity Fee Fee Fee Fee Fee Description Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) 101 740 201 370 Utility filing fee 106 330 206 165 Design filing fee 107 510 207 255 Plant filing fee 108 740 208 370 Reissue filing fee 114 160 214 80 Provisional filing fee SUBTOTAL (1) (\$) 0 | | | |
| 2. EXTRA CLAIM FEES Total Claims: _____ Independent Claims: _____ Multiple Dependent: _____ Extra Claims: _____ Fee from below: _____ Fee Paid: _____ Large Entity Small Entity Fee Fee Fee Fee Fee Description Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) 103 18 203 9 Claims in excess of 20 102 84 202 42 Independent claims in excess of 3 104 280 204 140 Multiple dependent claim, if not paid 109 84 209 42 ** Reissue independent claims over original patent 110 18 210 9 Reissue claims in excess of 20 and over original patent SUBTOTAL (2) (\$) 0 | | | |

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| SUBMITTED BY | | Complete (if applicable) | |
| Name (Print/Type) | Jane Barrow | Registration No. (Attorney/Agent) | 34,217 |
| Signature | <i>[Signature]</i> | Telephone | 202-404-1551 |
| | | Date | 6/27/02 |

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PATENT APPLICATION
Navy Case No. 79,812
**Reply Under 37 C.F.R.
§ 1.116**
Expedited Procedure
Group Art Unit 2815

#11/B (ME)
7/17/02
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Summers et al.
Serial No.: 09/614,682
Filed: July 12, 2000
For: CMOS DEVICES HARDENED AGAINST TOTAL DOSE RADIATION

Examiner: Nguyen, J.
Group Art Unit: 2815

June 26, 2002

Box AF
Commissioner for Patents
Washington, D.C. 20231

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AMENDMENT UNDER 37 C.F.R. § 1.116

Dear Sir:

In response to the Office Action mailed on March 5, 2002, finally rejecting claims 1-11, please amend the above-identified application as follows:

In the Drawings:

New Fig. 1 is attached hereto.

In the Specification:

Please amend the specification at page 5, second complete paragraph as follows:

B' The negative bias source 22 is adapted for applying a steady negative back bias to the substrate at a voltage that mitigates total dose radiation failures. The device operates by mitigating leakage currents about the device, while allowing the device to operate within its operational range, i.e., without changing the threshold voltage of the device to a degree that will cause the device to operate poorly. Typically, this negative bias will be between about -3V and about -0.5 V, relative to the source. The inventors have recognized that in the current generation of commercial CMOS devices, total dose radiation failures arise in the isolation region 24, rather than in the gate region.